

FIFO MEMORY WITH SINGLE PORT MEMORY MODULES FOR ALLOWING
SIMULTANEOUS READ AND WRITE OPERATIONS

ABSTRACT

The present invention is directed to a FIFO memory with single port memory modules that may allow simultaneous read and write operations. In an exemplary aspect of the present invention, a method for employing a FIFO memory with single port memory modules of half capacity to perform simultaneous read and write operations includes the following steps: (a) providing a first single port memory module for an even address of a read or write operation; (b) providing a second single port memory module for an odd address of a read or write operation; (c) alternating even address and odd address; and (d) when both a read request and a write request reach either the first single port memory module or the second single port memory module at a clock cycle, fulfilling the read request at the current clock cycle and fulfilling the write request at the next clock cycle.